Cancer’s Persistent Foe

More than 30 years ago, Drew Pardoll took the first steps toward his goal of creating therapies that tap the strength of patient immune systems. His determination is paying off.

THE 10-YEAR-OLD GIRL WAS DYING.

It was 1984, and Nicole was the first patient at The Johns Hopkins Hospital to receive a bone marrow transplant from an unrelated donor. She had been injected with healthy marrow, rich in disease-fighting immune cells, to replace material that had been decimated by cancer and radiation. But the donated immune cells were attacking her organs. The condition, known as graft-versus-host disease, occurs in about half of bone marrow recipients and is now treated with drugs that suppress the immune system. These days, it is rarely severe enough to be fatal.

At the time, Drew Pardoll was an oncology fellow, saddled with the searing assignment of caring for a child who would not live to adolescence. One night, as he flipped through the science journal *Nature*, an article about the workings of the immune system caught his attention. He thought about Nicole’s foreign immune cells, attacking both cancer tumors and healthy organs, powerful enough to kill her. And he contrasted her experience to that of bone marrow transplant patients who survived graft-versus-host disease, their cancer beaten back by the same immune system attack.

(continued on page 4)
Helping Our City Heal

RONALD R. PETERSON, PRESIDENT, THE JOHNS HOPKINS HOSPITAL AND HEALTH SYSTEM
EXECUTIVE VICE PRESIDENT, JOHNS HOPKINS MEDICINE

Baltimoreans have engaged in significant reflection following the tragic turmoil that erupted in April after the death of Freddie Gray from injuries sustained while in police custody. Clearly, much remains to be done to eliminate social inequities and injustices in our city and elsewhere, despite the genuine progress that has been made over the decades.

While pondering how we can better address these crucial issues, it is helpful to remember some of the remarkably effective efforts we have already undertaken.

For example, in early spring, we took part in two distinctly different events that celebrated the impact of Johns Hopkins Medicine’s decades-long commitment to improving the lives and opportunities of those who reside in the communities surrounding The Johns Hopkins Hospital.

On June 4, my colleagues and I were touched to be recognized by Big Brothers Big Sisters of the Greater Chesapeake, which honored Johns Hopkins Medicine’s more than two decades of work to improve the career opportunities and health of youth in our community.

We have continuously expanded our outreach. We began in the mid-1980s with what became our year-round health career development and youth mentoring program, Bonds-to-Bonds. Designed to support high school students in the Johns Hopkins Hospital area by exposing them to a variety of careers in health care through internships within our hospital, school of medicine and the broader health care system, this program is still very much in demand.

Twenty-one years ago, we also began our Johns Hopkins Summer Jobs Program, which has since then provided health care work and mentoring experiences for more than 2,500 young people. We have extended our outreach through the Dunbar High School Health Partnership and our Adopt-A-Class program for fourth graders. We also have supported the Start on Success Program for students with disabilities, as well as the Citywide Area Council of the Boy Scouts of America’s Scouting Outreach Program, which serves the most at-risk and disadvantaged youth in underserved neighborhoods and communities. And as much as Johns Hopkins Medicine has done to help the youth of our community with these and other programs, we are making plans to do even more.

Community leaders have told us that summer activities and employment for Baltimore’s young people are the highest priority. As a result, we are expanding our current summer jobs program to provide employment opportunities for more city youth. In partnership with Baltimore City’s summer jobs program, YouthWorks, Johns Hopkins is committed to increasing our placements by 50 percent, providing 300 more young people with paid internships across our institutions. Johns Hopkins Medicine will work hard to meet that commitment.

On the night of May 26, a crowd packed Turner Auditorium for our Dancing with the Johns Hopkins Stars benefit for United Way. By the end of the evening, more than $52,000 was raised to support United Way’s long-term strategies to create a region in which families have a place to call home, are financially stable, and have access to quality and affordable health care, and where students succeed in school.

Ten teams of top faculty, staff and students trained for weeks to perform a variety of dances, including the tango, the Hustle and hip-hop. It was a delight for me to emcee this event, which was an exceptional example of how deeply Johns Hopkins Medicine cares about our community.

Like our programs dedicated to youth mentoring, Johns Hopkins Medicine’s strong support for United Way is just one more example of how we have demonstrated our enduring dedication to alleviating the challenges of poverty and developing healthier communities in the neighborhoods we serve.

Learn more: See our Community Engagement Inventory at hopkinsmedicine.org/ebcommunityaffairs/directory.html.

Reaching Out to Families in Need

Each helps Harriet Lane Clinic doctors reach patients whose pharmacies were destroyed by looting.

“We were being proactive instead of waiting for patients to call us,” says Berger. “Everybody was appreciative. I was touched by the response.”

The protests and violence in Baltimore have drawn attention to the challenges faced by many of the city’s poorest residents, a population served by the Harriet Lane Clinic. Of the 7,500-plus children and adolescents seen by the clinic each year, 94 percent are on public insurance, says Tschudy.

Founded in 1912, the clinic serves as a complete medical home, with services that include after-school tutoring and mental health treatment. Through a program called Health Leads, staffed by Johns Hopkins University undergraduate students, patients are connected to such resources as food pantries, job training and low-cost child care.

The pharmacy outreach wasn’t the first time Epic helped Harriet Lane clinicians identify and help a specific category of patients. In March, with Bonetti’s help, Tschudy created a list of 200 children and teens who suffer from both allergies and asthma. Maria Miles, a clinic community health worker, contacted the families before allergy season began, reminding patients to take their asthma medications regularly, asking if refills were needed and sharing other strategies for coping with poor air quality.

“This is what preventative medicine is about,” says Tschudy.

Learn more about the Harriet Lane Clinic: bit.ly/1GMqrw3.

Learn how Tina Cheng, director of general pediatrics and adolescent medicine, fights health disparities: bit.ly/1FPJFza.

Epic helps Harriet Lane Clinic doctors reach patients whose pharmacies were destroyed by looting.

“EVERY FAMILY WE SPOKE WITH WAS EXTREMELY THANKFUL.”

—PEGGY TSCHUDY

ICHIEF PERSPECTIVES

INTEGRATION

EPRING

=DOME= J U L Y / A U G U S T 2 0 1 5

Megan Tschudy, assistant medical director of the Harriet Lane Clinic, uses Epic to improve population health.
Bridges developed severe symptoms after not taking his daily blood thinner pill for an extended period. On discharge, a nurse advised him to resume taking his medication. Then she scheduled an appointment for the following week for Bridges to see a doctor at the recently opened After-Care Clinic.

This new protocol, says internist Rosalyn Stewart, who co-directs the clinic with emergency medicine physician Arjun Channamugam, improves the odds that patients who struggle with managing their health will avoid further emergency care or readmission to the hospital. A joint effort among the departments of Medicine, Emergency Medicine, Care Coordination, Ambulatory Services, Surgery and Pharmacy, the After-Care Clinic serves as a safety net for these patients. Its goal: to extend primary care services for those in need of rapid follow-up—within a week after discharge from the hospital or evaluation in the ED.

“Patients coming to the hospital are sicker than they’ve ever been, so when we send them home, we need to make sure they have what they need to manage and to get follow-up.”
—MELISSA RICHARDSON, THE JOHNS HOPKINS HOSPITAL’S DIRECTOR OF CLINICAL RESOURCE MANAGEMENT

A recent study by the Center for Studying Health System Change, a Washington, D.C.-based research group, found that roughly one-third of adult patients discharged from the hospital don’t see a physician within the advised 30 days. Experts say that’s a key reason so many are readmitted.

“Patients coming to the hospital are sicker than they’ve ever been,” says Melissa Richardson, The Johns Hopkins Hospital’s director of clinical resource management. “So when we send them home, we need to make sure they have what they need to manage and to get follow-up.”

Over time, adds Stewart, “we want to make the After-Care Clinic an entry point for patients into a ‘medical home’ that connects them with Johns Hopkins primary care—the place where they can receive comprehensive services and patient education continuously under one roof.”

The After-Care Clinic is not an urgent care center, nor is it a primary care office, explains Stewart. Rather, it provides a setting where patients can be assessed, treated and transitioned to a community provider.

There’s also a financial reason for the clinic. Under new Medicare laws, hospitals are responsible for patients 30 days postdischarge and can incur substantial penalties for patients who are readmitted unnecessarily.

Six days after his ED visit, Bridges arrives for his clinic appointment. He tells Stewart and nurse practitioner Nancy Feeley that he’s doing OK.

“Good news,” says Feeley. “Your CT scan shows no pneumonia.” She listens to his chest and hears a murmur. “That could be because of clots in your lungs,” Stewart tells him to schedule a follow-up appointment with a primary care provider to chart his progress.

Despite the clinic’s best efforts, however, patients can fall through the cracks. Many, says Stewart, fail to provide their phone number. And about 50 percent of scheduled patients don’t show up for appointments.

For Bridges, who lives just blocks from The Johns Hopkins Hospital, the After-Care Clinic feels natural. “When I was growing up, Hopkins was a second home for my family, like when I got hurt playing football,” he says. “My aunts, uncles and grandparents all came here too.”

If Stewart has her way, The Johns Hopkins Hospital will become his—as well as other clinic patients’—medical home. Meanwhile, she hopes to expand the clinic model at other Johns Hopkins hospitals.

—Judy F. Minkove

Learn more about the After-Care Clinic: bit.ly/JHHaftercareclinic.
I decided two things,” says Pardoll, 58, leaning forward in a leather chair in his fourth-floor corner office of the Bunting Family and Jacob and Hilda Blaustein Family Cancer Research Building. “One was that the immune system was the most powerful antitumor weapon that we had, more powerful than any drug. The other was that we had to understand how to regulate it so we could focus it more on the cancer.”

With that “aha” moment, Pardoll began decades of research, at first in obscurity and now as a leader of research, at first in obscurity and now as a leader of

Today, FDA-approved treatments and clinical trials based in part on Pardoll’s discoveries are extending the lives of people with melanoma, lung cancer and other forms of cancer.

“Drew and his team are leading research that approaches we discussed often,” says Vogelstein, director of the Cancer Immunology Program. “The funding system in academic centers can’t support that.”

To move his ideas forward, he teamed with inventors to start an immuno-oncology company, Amplimmune, in 2006. When it was acquired by MedImmune for $500 million in 2013, investors took notice. Last year, Pardoll joined other immuno-oncology entrepreneurs to create Potenza Therapeutics in Cambridge, Massachusetts.

These business deals are lucrative for the researcher and Johns Hopkins, and they provide funding and business support critical to shepherding his discoveries forward. Says Pardoll: “The only things that matter for me is FDA approval and having the therapies available around the world.”

Immuno-Oncology

The human immune system is astonishingly complex and nimble, one day fighting the flu and the next making sure a paper cut stays infection-free. “It has to be ready for any invader,” says Pardoll. “Chemotherapy is one drug at a time. The immune system is trillions of different drugs.”

Today, cancer immunotherapy is one drug at a time. The immune system is trillions of different drugs.”

The idea of tapping this powerful internal weapon is not new. More than 120 years ago, William Coley, a bone surgeon at New York’s Memorial Hospital (now the Memorial Sloan Kettering Cancer Center), noticed that patients with cancer who got infections often saw their tumors shrink or disappear. In 1891, Coley began testing the phenomenon by injecting his patients with bacteria to spark an immune system response against the cancer.

Despite some success—and many excruciating failures—the procedure fell out of favor, particularly after radiation became the standard cancer treatment at the turn of the 20th century.

Coley’s theory was not in dispute. Scientists just had to figure out why immune systems are so good at vanquishing so many invaders yet so bad at stopping the spread of cancer. And they had to figure out how to tell immune system cells to attack cancer but spare healthy parts of the body.

Pardoll began tackling those questions when he was 27. Under the guidance of Johns Hopkins professors Donald Coffey and Bert Vogelstein, his Ph.D. advisors, he studied the immune system at the National Institute of Allergy and Infectious Diseases, a place devoted to research of immune response disorders.

“Don, Drew and I had weekly meetings about the best way to eventually conquer cancer, and studying the immune system was one of the approaches we discussed often,” says Vogelstein, whose own pioneering work has focused on the genetic mutations that cause cancer.

Preparing to Attack

Pardoll was used to taking the lead. He had skipped three grades while growing up in Elizabeth, New Jersey, becoming a Johns Hopkins undergraduate at age 15. He enrolled in the school of medicine just three years later. But this quest could not be rushed. When Pardoll joined the Johns Hopkins faculty in 1988, he was still far from his goal of developing immune-based cancer vaccines.

“You have to take 10 shots on goal to score that one goal,” he says. “Cancer has beaten us

HOW IMMUNO-ONCOLOGY WORKS: The top panel shows how the immune system’s T cells attack infected cells. Healthy cells give off signals called checkpoints, which tell the T cells they are not a threat. However, cancer cells can send out the same checkpoint signals, causing the T cells to back down. The bottom panel shows how new drugs called checkpoint inhibitors create a path that allows the T cells to override the checkpoint and attack.
The Next Frontier

More than 1,500 cancer researchers crowded into the auditorium, taking every available seat and standing in rows against the walls. On May 18, it was the annual meeting of the American Society of Clinical Oncology. Anticipation was high as Suzanne Topalian, director of the Melanoma Program at Johns Hopkins, walked to the podium.

Topalian and other Johns Hopkins investigators, including Julie Brahmer, director of the Thoracic Oncology Program, and Topalian’s husband, Drew Pardoll, had teamed with Bristol-Myers Squibb to develop and test a cancer drug called nivolumab. Known as a checkpoint inhibitor, nivolumab works by dissolving a shield called PD-1 that protects tumor cells from immune system attack.

The drug has been given to 296 patients with advanced cancers, including lung, renal cell, prostate, colorectal and melanoma. Their disease had survived multiple treatments. But with nivolumab, tumors shrank in about 25 percent of subjects across cancer types.

As she explained the study’s results in the packed room, Topalian delivered the best evidence to date that checkpoint inhibitors can triumph over cancer. In a follow-up at the same convention the following year, she reported even better news—the benefits in most patients lasted 12 months or longer. Immuno-oncology is “the next frontier” in cancer treatments, Topalian said in an interview at the time.

In December 2013, Science magazine ended 2013 on a high note, declaring immune-based cancer treatments the breakthrough of the year.

“The company launched in 1,500 square feet of laboratory and office space in the David H. Koch Cancer Research Building and moved to Rockville six months later. It now occupies a 20,000-square-foot facility in Gaithersburg, with on-site biologics manufacturing.”

In August 2013, seven years after that initial $20 million investment, Amplimmune was purchased by its neighbor MedImmune, an arm of the global biopharmaceutical company AstraZeneca, for $225 million, plus $275 million as agreed-upon milestones are reached.

“It made a lot of sense to bring Amplimmune into the MedImmune family,” explains Richman. “MedImmune has had its own pipeline of immune therapy.”

While Pardoll serves on MedImmune’s science advisory board, the company continues to develop therapies that “target the critical areas of the immune system that can hijack to escape destruction,” says Ronald Herbst, MedImmune’s vice president for oncology research and scientific development.

Soon after the acquisition, MedImmune and Johns Hopkins forged a five-year, $65 million research partnership, with both sides contributing funding and expertise to move forward several research projects, including immuno-oncology.

The sale of Amplimmune to MedImmune showed Pardoll’s business acumen as well as his research. “It made a big splash, with big numbers and high visibility,” says King.

As his therapies move forward in the private sector, Pardoll keeps learning more about the interactions between immune systems and cancer. He is investigating new checkpoint molecules and teaming again with Vogelstein, this time to study how cancers with different genetic compositions react to immune therapies. “This work brings together two fields of cancer research that normally do not interact,” he says.

“There will be successes and failures, but Pardoll remains focused. “I don’t think there’s a single cancer that can ultimately beat the patient’s own immune system,” he says.
Circle of Healing

The labyrinth at Johns Hopkins Bayview Medical Center offers a path for quiet contemplation.

A cool day, a woman with short, cropped white hair walks slowly, following the lines of a large, concentric circle. Behind her looms Johns Hopkins Bayview Medical Center. Although cars speed by just yards away, a shoulder-high hedge blocks any noise, preserving a sense of tranquility. The circular path is one that thousands have trod over the past 15 years. Since the labyrinth opened on June 7, 2000, it has served as a haven for those who have come—in sun and in drizzle, on warm summer days and frigid winter evenings—to seek a spot for quiet contemplation.

Some look for inspiration, like the surgeon who routinely walks the circular path before a complex operation. Others seek comfort, like the grief-striken nurse who must care for others while she mourns the loss of her own child. The concentric stone path has also seen its share of happy moments: local moms pushing strollers, neighborhood teens—even a summer wedding.

“An artful vision,” says Hopkins Bayview chaplain Marian Boyer. “Once you get to the center, you can release the concern and, ideally, walk out of the labyrinth having achieved some sense of clarity about it.”

Some visitors, like the white-haired woman, conclude their walk by sitting quietly for a time on one of several benches that line the circle’s periphery. Others share their musings in a journal that’s kept in a protective cover beneath the benches.

“The idea is to walk in with whatever burden is on your heart, and then to walk around the labyrinth really being ‘present,’” says Hopkins Bayview chaplain Marian Boyer. “Once you get to the center, you can release the concern and, ideally, walk out of the labyrinth having achieved some sense of clarity about it.”

Some visitors, like the white-haired woman, conclude their walk by sitting quietly for a time on one of several benches that line the circle’s periphery. Others share their musings in a journal that’s kept in a protective cover beneath the benches.

“I have found that the path to my destination is not always straight. If I am feeling lost, well, I might still be headed in the right direction…”

I come to walk for my mom who could not, and she always wanted to walk this circle. She was a patient here. She is gone to be with the Lord. I walk and talk and think of my mother. I found a sense of mindlessness, but a good kind. Not like when you get lost in TV or electronics or books, but in yourself. I would like to say: Don’t give up. No matter what. Never give up…”

An Ideal Venue

Hopkins Bayview’s Nicole Utech has been a regular visitor for years, often taking a lunch hour break from her work as a financial manager. “I like the idea that if you’re following these lines, you get to lose yourself,” she says, “no matter what’s distracting you. Just focus on the pattern.”

When it came time for her wedding, Utech and her fiance, Michael, lit upon the labyrinth as the ideal location. “For the past 10 years, I’ve been practicing more of a Buddhist lifestyle,” she says. “I wanted our wedding space to reflect that mindset—peaceful and meditative.”

On July 26, 2014, a light rain threatened to put a damper on things. But as the bride stepped out of the limousine, “the sun came out—it was gorgeous.”

She walked through an archway into the space and down “the aisle,” with guests standing gathered on either side in two half-circles. Nicole and Michael said their vows in front of the labyrinth’s small gurgling water feature.

“For months afterward, I would walk by the labyrinth on my way in work—it just made me smile every time,” Utech says. “This month marks a year since her wedding. These days, when she walks the circle, her thoughts are focused on the next big milestone in her life: the couple’s baby, due to arrive in August.”

—Sue De Pasquale

Every day, Johns Hopkins Bayview Medical Center patients, their family members and staff stroll through the labyrinth. Below, Hopkins Bayview financial manager Nicole Utech walks a path with her husband after exchanging wedding vows at the site.
What’s for Lunch?
Six nutritionists share their midday meal strategies.

B Ringing lunch to work instead of eating out can save money and improve health. But choosing nutritious, tasty and easy-to-make meals day after day can be challenging.

Six registered dietitians with the Johns Hopkins Institute for Clinical and Translational Research provide lunchtime inspiration. Each woman takes a different approach, influenced by her research, clinical work and particular nutrition needs. One is a distance runner who energizes with carbohydrates, while another chooses foods that combat menopause symptoms. All load up on fruits and vegetables, avoid foods made with artificial ingredients, and drink lots of water. They also eat healthy fats, enjoy occasional indulgences, and don’t obsess about calories.

CAN YOU MATCH THE NUTRITIONIST WITH HER LUNCH?

The Low-Carb Eater: Bobbie Henry, 31, began eating a low-carbohydrate diet about five years ago to combat reactive hypoglycemia, a condition that impairs her ability to regulate blood sugar. As a result, her dramatic energy spikes and troughs have disappeared, she says. Henry treats patients in the Adult Epilepsy Diet Center, where research is showing that diets that are high in fat and low in carbohydrates can lower seizure rates. Her indulgences: super-dark chocolate (85–90 percent cocoa), pizza.

The Local and Sustainable Advocate: Diane Vizthum, 29, gravitates toward food that is locally grown. Recently, she and her husband purchased a quarter cow (more than 100 pounds of meat) from a Harford County farm. The grass-fed beef is portioned, packaged and in their freezer, ready for quick meals made with “a lot of vegetables, healthy fat, whole grains and protein,” says Vizthum. Her indulgences: super-dark chocolate (85–90 percent cocoa), pizza.

The Athlete: Melissa Moser, 25, runs about 70 miles per week and needs a diet that fuels all those footsteps. She tries to get about 60 percent of her calories from carbohydrates, 20 percent from protein and 20 percent from fat. Her research showing the dangers of food additives for people with kidney disease inspires Moser to “eat real food.” Her indulgences: apples with peanut butter, trail mix, dry cereal, ice cream, chocolate.

The Antioxidant and Estrogen Proponent: Hong Brereton, 66, likes to cook, modifying recipes from her native Vietnam to meet her nutrition goals. She adds broccoli sprouts and other members of the cabbage family to prevent cell damage and fight disease, and chooses flaxseed and other foods with plant chemicals called phytoestrogens to combat the symptoms of menopause. Her indulgences: fruitcake, mango, dates and a banana eaten with a wedge of Laughing Cow cheese.

The Busy Food-lover: Meghan Ames, 27, captains a bicycling team, rock-climbs, hikes and takes yoga classes. When she can grab a few minutes in the kitchen, she’ll make a big pot of something easy, like soup or a grain-based salad, and bring the leftovers with a green salad for lunch. Ames, a school of nursing nutrition instructor and state obesity program coordinator, offers simple weight-loss advice: Move more, eat lots of produce. Her indulgence: mint chocolate chip ice cream.

The Working Mom: Susan Oh, 43, sneaks as much produce as she can into the diets of her three children, ages 8 to 12. She often makes entrees with tomato sauce, which contains the antioxidant lycopene, and adds pureed vegetables, including butternut squash, mushrooms, carrots, bell pepper, onions and garlic. She cooks on the weekends so she can heat up dinners during hectic weeknights; her family brings leftovers for lunch. Her indulgence: chocolate cake. 

—Karen Nitkin

For recipes, visit hopkinsmedicine.org/dome.
Ronald R. Peterson, president of The Johns Hopkins Hospital and Health System, and executive vice president of Johns Hopkins Medicine, has received the 2015 Life-time Achievement Award from Big Brothers Big Sisters of the Greater Chesapeake in recognition of his personal and organizational commitment to multiple youth mentoring programs in Maryland. Peterson, who retired in 2014, spent 14 years on the board of directors of the Maryland Mentoring Partnership, which he joined with Big Brothers Big Sisters, and serves on the board of another Baltimore-based nonprofit, the Living Classrooms Foundation. He also has been closely involved with Johns Hopkins Medicine’s participation in the Bond-to-Bond youth mentoring and career development program, the Adopt-A-Class program, the Johns Hopkins Medicine Partners in Education Program, and the Dunbar High School Health Partnership.

Ronald Worthman has been appointed director of the Johns Hopkins University School of Medicine’s Department of Radiology and Radiological Science. Previously, Worthman was senior vice president of finance and the treasurer and chief financial officer for The Johns Hopkins Hospital and Health System. As co-leader of Johns Hopkins Medicine finance and of the Strategic Planning and Finance Group, Worthman spearheaded efforts to reduce system costs while improving patient care.

Kim Sherbrooke, M.H.A., has become vice president and chief administrative officer of The Johns Hopkins Hospital. Sherbrooke was previously director of the ambulatory care operations at sites where Johns Hopkins-employed physicians practice. Her responsibilities include overseeing the training, education and engagement for community physicians aligned with or employed by Johns Hopkins. Sherbrooke will collaborate with the Office of Managed Care Contracting and will be the primary lead for assessing and implementing telemedicine in ambulatory care and for Access Services. Previously, she was chief operating officer for Indiana University Health Physicians.

Leslie Tung, Ph.D., professor and director of the undergraduate program in bio-medical engineering, has been named interim director of the department, succeeding Elliott McVeigh, Ph.D., who resigned as department director after serving eight years at its helm. Tung, a graduate of the Massachusetts Institute of Technology and a 19-year veteran of The Johns Hopkins University’s Department of Biomedical Engineering, oversees the largest undergraduate degree program at The Johns Hopkins University.

Xinchong Dong, Ph.D., professor of neuroscience and neurosurgery, has been named a Howard Hughes Medical Institute investigator. Dong is one of 26 newly tapped investigators and is the first from the Bayview Medical Center to receive this award. Dong’s实验室 focuses on how the brain’s immune system affects neurological disorders, cancer and other diseases.

Jonathan Lewin, M.D., senior vice president of integrat-ed health care delivery, co-chair for Johns Hopkins Medicine’s strategic planning and director of the Department of Radiology and Radiological Science, and radiologist-in-chief for The Johns Hopkins Hospital, has been elected president of the American Roentgen Ray Society.